



**STATE OF TENNESSEE  
DEPARTMENT OF HEALTH  
ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL  
Lab Services - Jackson Regional Lab  
Jackson, TN 38301  
731-426-0686

TDH: Lab Services KRL  
Lab Services - Knoxville Regional Lab  
Knoxville, TN 37920  
865-549-5201

TDH: Lab Services NCL  
Lab Services - Nashville Central Lab  
Nashville, TN 37243  
615-262-6300

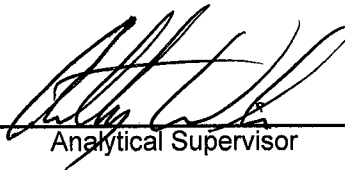
**Sent To:** Steve Roberts  
TDEC-DWS  
Knoxville FO  
3711 Middlebrook Pike  
Knoxville, TN 37921

**Lab ID:** K00003718  
Knoxville Regional Laboratory

**Sampling Agency:** TDEC: Division of Water Supply

**Billing Code:** 327.39-12

This is to certify that the following results were determined using  
good laboratory practices and in accordance with federal or state  
approved methodologies.

  
Analytical Supervisor

Lab-Sample Number: K00003718001  
Project Name:  
Sample Description: Kingston WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Finish

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 08:25

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

Send Report To: TDEC-DWS

Priority Date: 05/27/2010

Date/Time Received: 05/17/2010 12:44

Agency Invoiced: TDEC-DWS

Received By: Ken Hitchman

**TEST: Digestion Metals**

**METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/18/2010				A Wilson	5/18/2010

**TEST: ICP-MS**

**METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.82	5	M Pattanayek	5/19/2010
Barium	20	µg/L	0.26	5	M Pattanayek	5/19/2010
Beryllium	U	µg/L	0.21	1	M Pattanayek	5/19/2010
Cadmium	U	µg/L	0.5	1	M Pattanayek	5/19/2010
Chromium	U	µg/L	0.89	5	M Pattanayek	5/19/2010
Cobalt	U	µg/L	0.36	1	M Pattanayek	5/19/2010
Lead	U	µg/L	0.51	1	M Pattanayek	5/19/2010
Manganese	U	µg/L	0.59	1	M Pattanayek	5/19/2010
Selenium	U	µg/L	1.9	5	M Pattanayek	5/19/2010
Thallium	U	µg/L	0.25	1	M Pattanayek	5/19/2010
Vanadium	U	µg/L	2	5	M Pattanayek	5/19/2010

**TEST: Mercury**

**METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.038	0.2	A Wilson	5/19/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

Lab-Sample Number: K00003718002  
Project Name:  
Sample Description: Kingston WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 08:30

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

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**TEST: Digestion Metals**

**METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/18/2010				A Wilson	5/18/2010

**TEST: ICP-MS**

**METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.82	5	M Pattanayek	5/19/2010
Barium	20	µg/L	0.26	5	M Pattanayek	5/19/2010
Beryllium	U	µg/L	0.21	1	M Pattanayek	5/19/2010
Cadmium	U	µg/L	0.5	1	M Pattanayek	5/19/2010
Chromium	0.99J	µg/L	0.89	5	M Pattanayek	5/19/2010
Cobalt	U	µg/L	0.36	1	M Pattanayek	5/19/2010
Lead	U	µg/L	0.51	1	M Pattanayek	5/19/2010
Manganese	19	µg/L	0.59	1	M Pattanayek	5/19/2010
Selenium	U	µg/L	1.9	5	M Pattanayek	5/19/2010
Thallium	U	µg/L	0.25	1	M Pattanayek	5/19/2010
Vanadium	U	µg/L	2	5	M Pattanayek	5/19/2010

**TEST: Mercury**

**METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.038	0.2	A Wilson	5/19/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

Lab-Sample Number: K00003718003  
Project Name:  
Sample Description: Rockwood WTP

Field Determinations  
pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Finish  
Project Site No.:  
Station No.:  
Date/Time Collected: 05/17/2010 09:15  
Sampler's Name: Geoff Klein  
County: ROANE - 73  
Sample Matrix: Water  
EFO: Knoxville  
Sampling Agency: TDEC-DWS  
Billing Code: 327.39-12  
Send Report To: TDEC-DWS  
Priority Date: 05/27/2010  
Date/Time Received: 05/17/2010 12:44

Agency Invoiced: TDEC-DWS  
Received By: Ken Hitchman

**TEST: Digestion Metals**

**METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/18/2010				A Wilson	5/18/2010

**TEST: ICP-MS**

**METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.82	5	M Pattanayek	5/19/2010
Barium	25	µg/L	0.26	5	M Pattanayek	5/19/2010
Beryllium	U	µg/L	0.21	1	M Pattanayek	5/19/2010
Cadmium	U	µg/L	0.5	1	M Pattanayek	5/19/2010
Chromium	U	µg/L	0.89	5	M Pattanayek	5/19/2010
Cobalt	U	µg/L	0.36	1	M Pattanayek	5/19/2010
Lead	U	µg/L	0.51	1	M Pattanayek	5/19/2010
Manganese	U	µg/L	0.59	1	M Pattanayek	5/19/2010
Selenium	U	µg/L	1.9	5	M Pattanayek	5/19/2010
Thallium	U	µg/L	0.25	1	M Pattanayek	5/19/2010
Vanadium	U	µg/L	2	5	M Pattanayek	5/19/2010

**TEST: Mercury**

**METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.038	0.2	A Wilson	5/19/2010

J - Estimated value between MDL and MQL  
MDL - Method Detection Limit  
MQL - Method Quantitation Limit  
U - Undetected

Lab-Sample Number: K00003718004  
Project Name:  
Sample Description: Rockwood WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 09:20

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

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**METHOD: EPA 200.2**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/18/2010				A Wilson	5/18/2010

**TEST: ICP-MS**

**METHOD: EPA 200.8**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	µg/L	0.82	5	M Pattanayek	5/19/2010
Barium	23	µg/L	0.26	5	M Pattanayek	5/19/2010
Beryllium	U	µg/L	0.21	1	M Pattanayek	5/19/2010
Cadmium	U	µg/L	0.5	1	M Pattanayek	5/19/2010
Chromium	1.1J	µg/L	0.89	5	M Pattanayek	5/19/2010
Cobalt	U	µg/L	0.36	1	M Pattanayek	5/19/2010
Lead	0.56J	µg/L	0.51	1	M Pattanayek	5/19/2010
Manganese	21	µg/L	0.59	1	M Pattanayek	5/19/2010
Selenium	U	µg/L	1.9	5	M Pattanayek	5/19/2010
Thallium	U	µg/L	0.25	1	M Pattanayek	5/19/2010
Vanadium	U	µg/L	2	5	M Pattanayek	5/19/2010

**TEST: Mercury**

**METHOD: EPA 245.1**

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	µg/L	0.038	0.2	A Wilson	5/19/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected



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865-549-5201

TDH: Lab Services NCL  
Lab Services - Nashville Central Lab  
Nashville, TN 37243  
615-262-6300

**Sent To:** Steve Roberts  
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Knoxville, TN 37921

**Lab ID:** K00003718  
Knoxville Regional Laboratory

**Sampling Agency:** TDEC: Division of Water Supply

**Billing Code:** 327.39-12

This is to certify that the following results were determined using  
good laboratory practices and in accordance with federal or state  
approved methodologies.

  
Analytical Supervisor

Lab-Sample Number: K00003718001  
Project Name:  
Sample Description: Kingston WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Finish

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 08:25

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

Agency Invoiced: TDEC-DWS

Send Report To: TDEC-DWS

Priority Date: 05/27/2010

Date/Time Received: 05/17/2010 12:44 Received By: Ken Hitchman

TEST: Alkalinity, Total			METHOD: EPA 310.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	60	mg/L	3.8	10	M Chen	5/19/2010

TEST: Hardness, Calcium			METHOD: SM 3500-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	47	mg/L	0.7	1	M Chen	5/18/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

Lab-Sample Number: K00003718002  
Project Name:  
Sample Description: Kingston WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 08:30

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

Agency Invoiced: TDEC-DWS

Send Report To: TDEC-DWS

Priority Date: 05/27/2010

Date/Time Received: 05/17/2010 12:44

Received By: Ken Hitchman

TEST: Alkalinity, Total		METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	61	mg/L	3.8	10	M Chen	5/19/2010

TEST: Hardness, Calcium		METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	48	mg/L	0.7	1	M Chen	5/18/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected



Lab-Sample Number: K00003718003  
Project Name:  
Sample Description: Rockwood WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Finish

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 09:15

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

Agency Invoiced: TDEC-DWS

Send Report To: TDEC-DWS

Priority Date: 05/27/2010

Date/Time Received: 05/17/2010 12:44 Received By: Ken Hitchman

TEST: Alkalinity, Total		METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	57	mg/L	3.8	10	M Chen	5/19/2010

TEST: Hardness, Calcium		METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	53	mg/L	0.7	1	M Chen	5/18/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

Lab-Sample Number: K00003718004  
Project Name:  
Sample Description: Rockwood WTP

**Field Determinations**

pH:  
Chlorine, residual:  
Conductivity:  
Temperature:  
Dissolved Oxygen:  
Other:  
Flow: CFS

Sampler Project Name: Raw

Project Site No.:

Station No.:

Date/Time Collected: 05/17/2010 09:20

Sampler's Name: Geoff Klein

County: ROANE - 73

Sample Matrix: Water

EFO: Knoxville

Sampling Agency: TDEC-DWS

Billing Code: 327.39-12

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Received By: Ken Hitchman

TEST: Alkalinity, Total		METHOD: EPA 310.2				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	61	mg/L	3.8	10	M Chen	5/19/2010

TEST: Hardness, Calcium		METHOD: SM 3500-Ca D				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	48	mg/L	0.7	1	M Chen	5/18/2010

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected